Unmanned Sea Surface Vehicle

The Office of Naval Research is managing the development two Unmanned Sea Surface Vehicle (USSV) designs—one optimized for high towing force (USSV-HTF) and one optimized for high speed (USSV-HS). These vehicles are designed to complement the specifications and capabilities of the Littoral Combat Ship (LCS). Because of their size—each craft is 36–39 feet long—they operate best in littoral, or shallow, waters rather than in the open sea.

The USSV-HTF is designed to have a high payload capacity and high endurance. It can be used to tow sensors and effectors. This vehicle is under consideration for transition to the LCS program, and its development schedule is such that the vehicle will be ready to use when the LCS is put into operation.

The USSV-HS is optimized for high-speed travel, even in rough water. This vehicle is currently not under consideration for transition, but it is being developed to demonstrate the technological capabilities of such a vehicle, should the need arise.

The Naval Sea Surface Warfare Center in Carderock, Maryland and the Johns Hopkins University's Applied Physics Laboratory performed the mission requirements analysis for both vehicles in 2003. The vehicles were designed at Carderock, and they were built by the Maritime Applied Physics Corporation of Baltimore, Maryland.

Two prototypes have been built and tested in the water. The prototypes are being used to test various technological features, the most successful of which will be incorporated into the specifications of the future production vehicles, should the LCS program decide to acquire them. The two prototype USSVs are also being used to test various developmental payloads.

The features under development include craft design, autonomous controls, and autonomous launch and recovery mechanisms. The USSVs are "purpose-built"—that is, they have been designed from the ground up with the LCS's missions, weight and size limitations, and other features in mind. The USSVs can carry sensors and effectors for various littoral operations, and these payloads can be integrated into the design of the vehicle. The autonomous launch and recovery features were incorporated with the reduced staffing of the LCS in mind. These features also reduce the hazards to sailors, who will not need to go into dangerous areas to launch and retrieve the craft.